



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D3488-041
Job Sheet 176091



Part No: D3488-041

Job Qty: 8 ea

Part Name: Blade Fitting LH



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 4/17/18

Job Tracking No:

Due Date: 4/27/18

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: DWG DSK101 REV D, D3488 REV B IPP Rev:A New Issue 06-02-28 JLM IPP Rev:B As per Rev B 06-03-30
JLM IPP Rev:C Now On Doosan Lathe JLM Verified BY:DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	8 Ea	4/26/18	4/26/18	0.00	0.00	Start Up Machining-2		M.P. 18/03/13
100	Doosan	8 pcs	4/26/18	4/26/18	0.00	6.84	Doosan		M.P. 18/03/13
110	QC	8 pcs	4/26/18	4/26/18	0.00	0.00	QC2 Machining-2		M.P. 18/03/13
120	CNC Vertical Machining	8 pcs	4/26/18	4/26/18	0.34	6.61	HAAS1-3		M.P. 18/03/13
130	QC	8 pcs	4/26/18	4/26/18	0.00	0.00	QC2 Machining-2		M.P. 18/03/13
140	QC	8 pcs	4/26/18	4/26/18	0.00	0.00	QC8 Machining-2		M.P. 18-05-19
150	HandFinish	8 pcs	4/26/18	4/26/18	0.00	0.25	HandFinish1		M.P. 18-05-22
160	Powdercoat	8 pcs	4/27/18	4/27/18	0.00	0.28	Powdercoat1		M.P. 18-05-22
170	QC	8 pcs	4/27/18	4/27/18	0.00	0.00	QC3		M.P. 18-05-22
180	HandFinish	8 pcs	4/27/18	4/27/18	0.00	0.00	HandFinish4		M.P. 18-05-22
190	QC	8 pcs	4/27/18	4/27/18	0.00	0.00	QC5		M.P. 18-05-22
200	Packaging	8 pcs	4/27/18	4/27/18	0.00	0.00	Packaging3-1		M.P. 18-05-22
210	QC21-SA	8 Ea	4/27/18	4/27/18	0.00	0.00	QC21		M.P. 18-05-22

Part Op 100 - 1-Turn as per Dwg DSK 101 & Folio FA625
Descriptions: 120 - 1-Machine as per Folio FA625 & Dwg D3488

160 - START TIME: 11:05 O.V.T. 30° FINISH: 11:05

180 - Install Inserts as per Dwg D3488

200 - LOCATION : FP001

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D6103-003	Round Billet, Aluminum	8 Ea (1 ea)	90-Start up Operation	
ALS7-1032-225	Insert	32 Ea (4 ea)	180-HandFinish	5058188

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D6103-003	8	31	0
180-HandFinish	ALS7-1032-225	32	1,068	0

Part Specifications

Specifications could not be found.

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐				

DART AEROSPACE LTD	Work Order:	176091
Description: Blade Fitting, LH / Turning Detail for D3488-1/-2	Part Number:	D3488-1
Inspection Dwg: D3488 / DSK101 Rev: B / D		Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Lathe Section						
Ø2.150	+/-0.005	2,148	✓		HDP-04	vern
Ø2.780	+/-0.005	2,780	✓			
Ø3.125	+/-0.010	3,124	✓			
Ø3.346	+/-0.010	3,346	✓			
0.125 x 45°	+/-0.010 x +/-0.1°	0,125 x 45°	✓			
8.000	+0.030/-0.000	8,016	✓			
9.250	+/-0.010	9,246	✓			
0.188	+/-0.010	0,188	✓			
R0.032	+/-0.010	0,032	✓			
R0.062	+/-0.010	0,062	✓			
Ø0.297	+0.005/-0.001	0,300	✓			
Ø0.430	+/-0.010	0,435	✓			
0.100	+/-0.010	0,103	✓			
0.125	+/-0.010	0,126	✓			
2.620	+/-0.010	2,623	✓			
3.500	+/-0.010	3,500	✓			
1.005	+/-0.010	1,005	✓			
Ø0.484	+0.005/-0.001	0,487	✓			
1.180	+/-0.010	1,180	✓			
3.150	+/-0.010	3,150	✓			
3.070	+/-0.010	3,063	✓			
R0.063	+/-0.010					

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					

DART AEROSPACE LTD		Work Order:	176091
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Inspection Dwg: D3488 / DSK101 Rev: B / D		Page 2 of 2	

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Milling Section						
Ø0.508	+0.006/-0.001	0.507	✓		vern	gmm L-05
0.750	+/-0.010	0.750	✓		↓	
1.500	+/-0.010	1.498	✓		↓	
11.18	+/-0.030	11.180	✓		↓	
R0.062	+/-0.010	0.062	✓		RG	
0.125	+/-0.010	0.125	✓		vern	gmm L-05
0.590	+/-0.010	0.591	✓		↓	
0.793	+/-0.010	0.796	✓		↓	
1.351	+/-0.010	1.354	✓		Heigh G	31006
1.317	+/-0.010	1.319	✓		micro	gmm L-02
1.802	+/-0.010	1.801	✓		Heigh G	31006

Measured by: <i>hwp</i> <i>mak</i>	Audited by: <i>S.C. - L</i>	Prototype Approval:	N/A
Date: 18/03/12 16/05/15	Date: 18-08-19	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	06.03.31	New Issue	KJ/JLM	
B	08.09.19	Reformat P/O D3488-041	KJ/JLM	
C	08.12.02	Dimension 8.000 removed	KJ/JLM	<i>[Signature]</i>

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Skid-tube ☐</td> <td style="width: 15%;">Cross tube ☐</td> <td style="width: 15%;">Water Jet ☐</td> <td style="width: 15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval																	
Description Work Order Deviation			Disposition																		
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ULT CATEGORY <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center </td> <td style="width: 50%; vertical-align: top;"> ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence </td> </tr> </table> Unqualified Unclear						☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center	☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence														
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Container No: S070858
 Part: D3488-041
 Job No: 176091
 Serial No/Batch: S070858
 Revision:
 Inspector:

Date: 05/13/18